



Degree Program Assessment - CMGT - BSCM for 2019

Degree code: CMGT

Degree type: BSCM

Degree title: Construction Management

Assessment year: 2019-2020

Matrix (Enter 3 or 4 rows):

Student Learning Outcome #1-5:

Of the first 5 ACCE Student Learning Outcomes, all 5 outcomes were assessed this year (full 3-year rotation schedule of all outcomes measured per year available in notes field at end of form):

1. Create written communications
2. Create oral presentations appropriate to the construction disciplines.
3. Create construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedule

Measure(s):

Student Learning Outcome 1 as measured in CONS 4030 Construction Safety

Course Learning Outcome aligned with ACCE Student Learning Outcome 1:

- A. Produce a safety handout & safety outline for an assigned topic

Student Learning Outcome 2 as measured in CONS 4047/4048 Advanced Construction Projects

Course Learning Outcome aligned with ACCE Student Learning Outcome 2:

- F. Make a team presentation

Student Learning Outcome 2 as measured in CONS 4030 Construction Safety

Course Learning Outcome aligned with ACCE Student Learning Outcome 2:

- B. Make an effective presentation on the assigned topic

Student Learning Outcome 3 as measured in CONS 4030 Construction Safety

Course Learning Outcome aligned with ACCE Student Learning Outcome 3:

- F. Write a research paper on an assigned safety plan topic for a specific trade

Student Learning Outcome 4 as measured in CONS 3018/3019 Construction Quantity Estimating

Course Learning Outcomes aligned with ACCE Student Learning Outcome 4:

- A. Search the bid documents for procedures & costs
- C. Identify the trades and calculate productivity rate, total workhours, total days and labor, materials and equipment unit costs and total costs
- D. Evaluate the soils report and perform quantity takeoff for the excavation, concrete and roofing
- E. Calculate the project overhead. Selected subs and completed the Condensed Estimate Summary form
- F. Calculate the percentage overhead items and bond premium

G. Complete the Unbalanced Bid Form

H. Complete the bid forms correctly and submit at a simulated public bid opening

Student Learning Outcome 5 as measured in CONS 4005/4006

Course Learning Outcomes aligned with ACCE Student Learning Outcome 5:

A. Develop a logic network with design, procurement and construction activities along with a crew utilization chart

B. Develop an activity listing and corresponding durations for a construction project.

C. Create a Time Scaled logic Network

D. Calculate the activity event times and durations and determine the event times for a project

E. Recognize resource requirements and allocate these requirements to the schedule

Student Learning Outcome 5 as measured in CONS 4047/4048 Advanced Construction Projects

Course Learning Outcomes aligned with ACCE Student Learning Outcome 5:

E. Create schedules from a digital set of plans

Target(s):

For each measure embedded in courses, the target for student performance is that 70% of the students will attain a 70% or higher score on the evaluation of the assignment.

Does this degree program have an online version?:

No

Was this target met?:

Met

Results - Explain target met answer:

Outcome 1:

CONS 4030

- CLO A, SLO 1 – 85% of the students achieved an average score of 83% that exceeded the target of 70%; no students scored between 70% and 83%.

Outcome 2:

CONS 4047/4048

- CLO F, SLO 2 - 70% of the students achieved a 70% or higher grade and that exceeds the target
CONS 4030

- CLO B, SLO 2 – 97% of the students achieved an average score of 92% that exceeds the target of 70%; no students scored between 70% and 92%.

Outcome 3:

CONS 4030

- CLO F, SLO 3 - 85% of the students achieved an average score of 81% which exceeds the target of 70%; no students scored between 70% and 81%.

Outcome 4:

CONS 3018/3019

- CLO A, SLO 4 – 88% of the students achieved a 70% or higher grade and that exceeds the target
- CLO C, SLO 4 – 93% of the students achieved a 70% or higher grade and exceeded the target
- CLO D, SLO 4 – 87% of the students achieved a 70% or higher grade and that exceeds the target
- CLO E, SLO 4 - 80% of the students achieved a 70% or higher grade and that exceeds the target
- CLO F, SLO 4 - 80% of the students achieved a 70% or higher grade and that exceeds the target
- CLO G, SLO 4 - 80% of the students achieved a 70% or higher grade and that exceeds the target
- CLO H, SLO 4 – 80% of the students achieved a 70% or higher grade and that exceeds the target

Outcome 5:

CONS 4005/4006

- CLO A, SLO 5-92% of the students achieved a 70% or higher grade and that exceeds the target
 - B, SLO 5-92% of the students achieved a 70% or higher grade and that exceeds the target
 - CLO C, SLO 5-92% of the students achieved a 70% or higher grade and that exceeds the target
 - CLO E, SLO 5-92% of the students achieved a 70% or higher grade and that exceeds the target
- CONS 4047/4048

- CLO E, SLO 5 - 80% of the students achieved a 70% or higher grade and that exceeds the target

Actions to Seek Improvement or Maintain Success:

All targets were met, but faculty continue to use assessments to determine ways to revise and update curriculum to ensure students continue to meet or exceed expectations.

In CONS 4047/4048, faculty revised the syllabus and added and adjusted course process to make each team member more accountable via additional peer review. They also replaced reflection style writing with additional component in company profile and site specific safety plan and further addressed project delivery methods.

In CONS 4030, faculty have rewritten most of the assignments and all of the tests into multiple choice question scenarios that measure students critical thinking skills.

Faculty teaching CONS 3018/3019 revised the syllabus and added a Project overhead unbalanced bid test. A bid compilation assignment was also added and problems split into overhead problems with solutions and added a problem section on bid organization. This was done because the interval between the tests was too long. The goal is to improve the scores on Course Learning Objectives (CLO) E – Calculate the project overhead, select the Subs; F – Calculate the percentage overhead items & bond premium; , and G – Complete the Unbalanced Bid Form.

Students in CONS 4005/4006 were asked to start by creating hand made schedules. They were then taught how to use scheduling software. Once they had learned the software they were given scenarios to create schedules. This meant using all of the different skills they had learned in class. Throughout the entire process we worked with critical thinking skills and thinking through alternatives. Once the class was completed, the syllabus for the next semester was updated. The main components that were adjusted was a redistribution of the time. Several of the scenarios needed more time to be effective. There were also a couple of assignments that needed to be adjusted in order to use time better. Finally there was a need to create another scenario to create better closure for the course.

Student Learning Outcome #6-10:

Of ACCE Student Learning Outcomes 6-10, all outcomes were assessed this year (full 3-year rotation schedule of all outcomes measured per year available in notes field at end of form):

6. Analyze professional decisions based on ethical principles.
7. Analyze construction documents for planning and management of construction processes
8. Analyze methods, materials, and equipment.
9. Create construction project cost estimates
10. Apply electronic-based technology to manage construction projects.

Measure(s):

Student Learning Outcome 6 as measured in CONS 3018/3019 Construction Quantity Estimating

Course Learning Outcome aligned with ACCE Student Learning Outcome 6:

B. Analyze bidding ethics situations

Student Learning Outcome 7 as measured in CONS 4047/4048 Advanced Construction Projects

Course Learning Outcome aligned with ACCE Student Learning Outcome 7:

C. Identify the steps of the Engineering, Procurement and Construction (EPC) process

Student Learning Outcome 8 as measured in CONS 1020/1021 Materials and Testing

Course Learning Outcome aligned with ACCE Student Learning Outcome 8

A. Describe the various types and qualities of aggregates, including sampling techniques, gradation, unit weight,

specific gravity, compliance with specifications & standard lab testing methods

Student Learning Outcome 9 as measured in CONS 4047/4048 Advanced Construction Projects

Course Learning Outcome aligned with ACCE Student Learning Outcome 9

D. Each team will perform the functions necessary to complete a construction project from a digital set of plans

Student Learning Outcome 10 as measured in CONS 4047/4048 Advanced Construction Projects

Course Learning Outcomes aligned with ACCE Student Learning Outcome 10

A. Each individual will perform the BIM software functions with the ability to manipulate different 3D models

B. Identify specific information in both the 2D and 3D formats.

Student Learning Outcome 10 as measured in CONS 4005/4006 Construction Scheduling

Course Learning Outcomes aligned with ACCE Student Learning Outcome 10

F. Create a plan and schedule a complete construction project and publish the project construction

G. Create a schedule, resource allocation, and cost allocation using a construction scheduling software program

Target(s):

For each measure embedded in courses, the target for student performance is that 70% of the students will attain a 70% or higher score on the evaluation of the assignment.

Does this degree program have an online version?:

No

Was this target met?:

Mixed Results

Results - Explain target met answer:

Outcome 6:

CONS 3018/3019

- CLO B. SLO 6 - 93% of the students achieved a 70% or higher grade and exceeds the target

Outcome 7:

CONS 4047/4048

- CLO C. SLO 7 – 85% of the students achieved a 70% or higher grade and exceeded the target

Outcome 8:

CONS 1020/1021

- Measure A, Learning Outcome 8 – 25% of students (or greater) achieved, 70% or greater on the direct measure and 70% of the students (or greater) achieved a 70% or greater on the indirect measure.

Outcome 9:

CONS 4047/4048,

- CLO D, SLO 9 – 70% of the students achieved a 70% or higher grade and that exceeds the target

Outcome 10:

CONS 4047/4048

- CLO A, SLO 10 – 100% of the students achieved a 70% or higher grade and that exceeds the target
- CLO B. SLO 10 - 90% of the students achieved a 70% or higher grade and exceeds the target
CONS 4005/4006

- CLO F, SLO 10-92% of the students achieved a 70% or higher grade and that exceeds the target
- CLO G, SLO 10-92% of the students achieved a 70% or higher grade and that exceeds the target

Actions to Seek Improvement or Maintain Success:

All targets were met with the exception of one assignment in CONS 1020/1021. In this course, the students were asked to study the physical makeup and uses of the major types of materials used in the construction industry. They were taught certain standards used to qualify these materials as acceptable for use in construction projects. Exam No.1 was the only Direct or Indirect Measure the produced a grade below 70%. Special review and redirected emphasis will be placed on study guidance for this section of this course. Additionally, the syllabus for this class was updated to reflect the University schedule and other beneficiary revisions. This course will now have open book, open notes types of test. All the Examinations for this course has been converted to multiple choice questions. This should provide quicker feedback to the student. A separate math Study Guide has been developed for use in this course with its intended value planned to emanate into all the Construction Management curriculum.

In the other courses with embedded assessments, faculty continue to use the assessment results to determine ways to revise and update curriculum to ensure students continue to meet or exceed expectations on the other course learning outcomes. For example, in CONS 3018/3019, faculty revised the syllabus and added a Project overhead unbalanced bid test. They also added a bid compilation assignment and split the problems into overhead problems with solutions and added a problem section on bid organization. This was done because the interval between the tests was too long. The goal is to improve the scores on Course Learning Objectives (CLO) E – Calculate the project overhead, select the Subs; F – Calculate the percentage overhead items & bond premium; , and G – Complete the Unbalanced Bid. In CONS 4047/4048, faculty revised the syllabus and added and adjusted course process to make each team member more accountable via additional peer review. They also replaced reflection style writing with additional component in company profile and site specific safety plan. Removed lean and further addressed project delivery methods. Finally, in CONS 4005/4006,

syllabus components were adjusted for a redistribution of the time. Several of the scenarios needed more time to be effective. There were also a couple of assignments that needed to be adjusted in order to use time better.

Student Learning Outcome #11-15:

Of ACCE Student Learning Outcomes 11-15, outcomes 13 and 15 were assessed this year (full 3-year rotation schedule of all outcomes measured per year available in notes field at end of form):

- 13. Understand Construction risk management
- 15. Understand construction quality assurance and control.

Measure(s):

Student Learning Outcome 13 as measured in CONS 4030

Course Learning Outcomes aligned with ACCE Student Learning Outcome 13

- C. Identify the content of an effective Safety and Health accident prevention training program
- D. Describe the safety responsibilities of the employees, supervisors and contractors that is directed towards the Focused Four
- E. Recognize and abate safety hazards covering the Focused Four, Construction Subparts A – CC, confined space, silica, respirators, asbestos, cadmium and lockout/tagout

Student Learning Outcome 15 as measured in CONS 1020/1021

Course Learning Outcomes aligned with ACCE Student Learning Outcome 15

- B. Create a of hot mix asphalt, including basic properties, mix design methods, liquid asphalts, production and placement
- C. Perform material testing procedures on aggregates and create concrete mix designs in the laboratory
- D. Determine the aggregates for Portland Cement concrete, including basic engineering related properties, mix design methods, mixing, placing and curing of concrete, and lab methods for testing compressive and flexural strength.
- E. Discuss the properties of steel and other metals, including stress and strain, Modulus of Elasticity, behavior under load, and strength of bolted connections.
- F. Describe the properties of wood, including terminology, wood products, grading of lumber and preservation.

Target(s):

For each measure embedded in courses, the target for student performance is that 70% of the students will attain a 70% or higher score on the evaluation of the assignment.

Does this degree program have an online version?:

No

Was this target met?:

Met

Results - Explain target met answer:

Outcome 13:

CONS 4030

- CLO C, SLO 13 – 98% of the students achieved an average score of 88% that exceeds the target of 70%; no students scored between 70% and 88%.

- CLO D, SLO 13 - 98% of the students achieved an average score of 88% that exceeds the target of 70%; no students scored between 70% and 88%.
- CLO E, SLO 13 - 98% of the students achieved an average score of 88% that exceeds the target of 70%; no students scored between 70% and 88%.

Outcome 15:

CONS 1020/1021

- Measure B, Learning Outcome 15 – 70% of students (or greater) achieved, 70% or greater on the direct measure and 70% or greater on the indirect measure.
- Measure C, Learning Outcome 15 – 70% of students (or greater) achieved, 70% or greater on the direct measure and 70% or greater on the indirect measure.
- Measure D, Learning Outcome 15 – 70% of students (or greater) achieved, 70% or greater on the direct measure and 70% or greater on the indirect measure.
- Measure E, Learning Outcome 15 – 70% of students (or greater) achieved, 70% or greater on the direct measure and 70% or greater on the indirect measure.
- Measure F, Learning Outcome 15 – 70% of students (or greater) achieved, 70% or greater on the direct measure and 70% or greater on the indirect measure.

Actions to Seek Improvement or Maintain Success:

All targets were met, but faculty continue to use assessments to determine ways to revise and update curriculum to ensure students continue to meet or exceed expectations on the other course learning outcomes. In CONS 4030, faculty rewrote most of the assignments and all of the tests into multiple choice question scenarios that measure students critical thinking skills. In CONS 1020/1021, the syllabus was updated to reflect the University schedule and other beneficiary revisions. This course will now have open book, open notes types of test. All the Examinations for this course has been converted to multiple choice questions. This should provide quicker feedback to the student. A separate math Study Guide has been developed for use in this course with its intended value planned to emanate into all the Construction Management curriculum.

Student Learning Outcome #4:

Of ACCE Student learning Outcomes 16-20, outcome 18 was assessed this year (full 3-year rotation schedule of all outcomes measured per year available in notes field at end of form):

18. Understand the principles of sustainable construction.

Measure(s):

Student Learning Outcome 18 as measured in CONS 1020/1021

Course Learning Outcome aligned with ACCE Student Learning Outcome 18:

G. Identify sustainability, reuse and recycling principles

Target(s):

For each measure embedded in courses, the target for student performance is that 70% of the students will attain a 70% or higher score on the evaluation of the assignment.

Does this degree program have an online version?:

No

Was this target met?:

Met

Results - Explain target met answer:

Outcome 18:
CONS 1020/1021,

Measure G, Learning Outcome 18 – 70% of students (or greater) achieved, 70% or greater on the direct measure and 70% or greater on the indirect measure.

Actions to Seek Improvement or Maintain Success:

The target was met, but faculty continue to use assessments to determine ways to revise and update curriculum to ensure students continue to meet or exceed expectations on the other course learning outcomes. In CONS 1020/1021, the students were asked to study the physical makeup and uses of the major types of materials used in the construction industry. They were taught certain standards used to qualify these materials as acceptable for use in construction projects. Moving forward, the syllabus for this class was updated to reflect the University schedule and other beneficiary revisions. This course will now have open book, open notes types of test. All the Examinations for this course has been converted to multiple choice questions. This should provide quicker feedback to the student. A separate math Study Guide has been developed for use in this course with its intended value planned to emanate into all the Construction Management curriculum.

Notes (optional):

Course Evaluations Schedule (with ACCE aligned Student Learning Outcomes)

Spring/Summer 2018

- CONS 1020 & 1021 Materials (ACCE SLOs 8,15,18)
- CONS 1040/1041 Practices (ACCE SLOs 8,9)
- CONS 3018/3019 Quantity Estimating (ACCE SLOs 4,6)
- CONS 4030 Safety (ACCE SLOs 1,2,3,13)
- CONS 4005/4006 Scheduling (ACCE SLOs 5,10)
- CONS 4047/4048 Advanced Construction Projects (3D Model) (ACCE SLOs 2,5,7,9,10)

Spring/Summer 2019

- CONS 1003 & 1004 Construction Graphics (ACCE SLO 8)
- CONS 2015 Structures (ACCE SLO 19)
- CONS 2008/2009 Construction Docs Plan Reading (ACCE SLO 8)
- CONS 3030 Construction Admin (ACCE SLOs 6,16,17)
- CONS 4045/4046 Digital Site (ACCE SLOs 2,10)
- CONS 4008/4009 Cost Estimating (ACCE SLOs 4,6,8,14)
- CONS 3020 Mechanical and Electrical Systems (ACCE SLO 20)

Spring/Summer 2020

- CONS 3015 Temporary Structures (Formwork & Rigging) (ACCE SLOs 8,19)
- CONS 2011/2012 Surveying (ACCE SLOs 9,11)
- CONS 4020 Exam Prep (ACCE SLOs 1-20 with emphasis on 1,7,14,16)
- CONS 4040 Contracts (ACCE SLOs 1,6,12,13,17)
- CONS 2016/2017 Computer Applications (ACCE SLOs 2,10)

CONS 2026.2027 Mechanical, Electrical Plumbing Plan Reading (ACCE SLO 20)

CONS 2030/2031 Soils & Test (ACCE SLOs 15,19)